Solutions
with Partners

About Systematic
Systematic is an internationally renowned software company providing scalable software products, services and projects for defence forces, security organisations and systems integrators.

Systematic is redefining defence and security IT procurement with its off-the-shelf product range for command and control, situational awareness, crisis management, intelligence and information exploitation. In addition, the company provides training, consultancy and integration services in these highly specialised fields.

The company’s products and services are proven operationally in combat, humanitarian missions, emergency response, public order events and internal security.

Working internationally with local partners, Systematic delivers cost-effective solutions to more than 100,000 users in over 40 countries.

About IFAD
IFAD is an international supplier of simulation products and networked team training solutions. IFAD has more than 20 years’ experience in providing networked simulation solutions and support to our customers.

IFAD provides simulation-based training solutions for Defence and Homeland Security.

- Naval Training Solutions
- Close Air Support Training
- Radio Communications Training
- Incident Command Training
- Combat Medical Training

Training in simulated environments proves much more cost effective than live exercises requiring the transportation of troops, equipment and resources. There are many simulation systems on the market, but few offer a simple integration with Command and Control (C2) systems. This is where the C2 Simulator Gateway breaks new ground.

The C2 Sim GW was built by IFAD and Systematic for the Danish Army, who is using it in their tactical trainer connected to the Joint Conflict and Tactical Simulation (JCATS) system, SteelBeasts and VBS2.

The gateway provides a direct interface to Systematic’s SitaWare suite of C2 software for the vast majority of simulation systems, including JCATS, MAGS SWORD, CAE GESI, JTTS, CATS TYR and VBS2. It can also provide an open interface to other JC3IEDM based systems using SitaWare C2 server as the MIP gateway.

The C2 Sim GW is usable at all levels – from forces equipped with SitaWare Frontline at platoon level to Joint commands using SitaWare Headquarters and SitaWare Headquarters WebCOP.

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C2 Sim GW
Bringing situational awareness to simulation systems

S2 Sim GW
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Integrating C2 with simulation systems

The C2 Sim GW is designed for military training centres as well as integrated test beds and battle labs. It is an ideal solution for training systems from the tactical level up to staff and command team training as well as for Concept Development and Experimentation (CD&E).

**Simulation to C2 Information Mapping**

The C2 Sim GW provides tracking and mapping of DIS/HLA entities to tracks in the SitaWare C2 system:
- Single entities (equipment and personnel) and groups of entities (units)
- Entity type and force id to MIL2525B symbol code
- Entity name, position (lat/long), elevation, speed, direction and status (operational level)

The C2 Sim GW provides mapping of additional DIS/HLA simulation data to the SitaWare C2 system, such as:
- Cultural features, such as bridges, buildings, craters etc
- Areas, such as Mine fields
- Supplies

The C2 Sim GW supports large scale simulation exercises with up to 30,000 entities.

**GPS and Sensor Interfaces**

For SitaWare Frontline, the C2 Sim GW provides real-time GPS and sensor feeds, such as laser range finder, gun and turret directions. The specific interfaces depend upon the SitaWare integration in the vehicle or mobile platform.

**Simulation to C2 Management**

The filtering of simulation data to the SitaWare C2 system is highly configurable using the C2 Sim GW, which also controls mapping rules and update rates.

Tracking and mapping of DIS/HLA entities to tracks in SitaWare is set up individually for each SitaWare C2 system connected to the simulation environment via a central management tool. The configuration includes:
- Paring each SitaWare C2 system with a simulated entity (own unit)
- Selected simulation entities or groups of entities (friendly, neutral and hostile) to track per SitaWare C2

**Simulation to C2 Interoperability**

The C2 Sim GW is based on IFAD’s proven simulator networking platform supporting DIS and HLA with the Real-time Platform Reference Federation Object Model (RPR FOM).
- HLA 1.3, HLA 1516, HLA Evolved and several RTI’s
- HLA SISO RPR FOM 1.0, 2.0 (draft 17)

Additionally, Steel Beasts support is enabled through a Steel Beasts DIS/HLA gateway embedded into the C2 Sim GW management tool.

**Military Challenges**

- Reduced defense budgets
- Increased stress on ‘value for money’ and the need for proven high quality
- Shorter timescales from procurement to deployment
- New capabilities are needed now – there is no time or long development projects
- Emphasis on international collaboration, and a strong requirement for interoperability

**Military Benefits**

- Short integration time
- Platform and protocol independent interface
- Multiple protocols (DIS and HLA and various FOM’s)
- Multiple platforms (Windows and Linux)

**Key Features**

- Meets all core requirements straight out of the box
- Proven Reliability that’s tried and tested
- Open and extendable architecture
- Complies with MIP, NFF, and other interoperability standards (BML, MSDL)